



DIVISION OF LOCAL FINANCE  
**COMPTROLLER OF THE TREASURY**  
STATE OF TENNESSEE

**Memorandum**

**To:** Honorable Justin Wilson, Comptroller of the Treasury  
Honorable David Goetz, Commissioner of Finance & Administration  
Honorable Tre Hargett, Secretary of State  
Honorable David Lillard, Treasurer

**From:** Ronald H. Queen, Manager of Local Finance *RHQ*  
Keith Boring, Associate Legislative Research Analyst *KB*

**Date:** 4/30/2009

**Re:** Economic Report to the Governor

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TCA § 9-4-5202(a) requires the State Funding Board (Board) to “secure from the Tennessee econometric model a report of the estimated rate of growth of the state's economy.” The estimated rate of growth in the state's economy is based on the projected change in Tennessee personal income (TCA § 9-4-5201(a)). TCA § 9-4-5202(b) requires the Board to “make comments relating to the reasonableness of the estimate, including any different estimate the board deems necessary.”

This memorandum provides a staff commentary for the Board to use in making comments relating to the reasonableness of the estimated rate of growth of the state's economy. The University of Tennessee's Center for Business and Economic Research (CBER) annually publishes *An Economic Report to the Governor of the State of Tennessee* (Economic Report). The 2009 Economic Report contains the current estimates of the change in Tennessee personal income from the Model for calendar years 2009 and 2010, Fiscal Year 2010, and other relevant United States and Tennessee economic statistics.

*Overall Conclusion:* Based upon a review of various economic forecasts, other economic trends, and historical Tennessee growth, CBRE's projection of 1.5 percent nominal personal income growth for Fiscal Year 2010, 0.68 percent for calendar year 2009, and 2.82 percent for calendar year 2010 appears reasonable.

## Analysis of an Economic Report to the Governor: 2009

### STAFF COMMENTARY

The tool used to forecast Tennessee's economic growth is the Tennessee Econometric Model (the Model). Economic forecasts face risks due to uncertainty. The occurrence of unexpected events and/or changes in the relationships of underlying explanatory data may decrease a model's ability to provide useful estimates. This commentary represents the Funding Board's staff review of other economic forecasts of United States real gross domestic product (GDP) and current economic conditions to comment on the reasonableness of the Model's estimate of the rate of growth of the state's economy.

*An Economic Report to the Governor of the State of Tennessee* (Economic Report) by the University of Tennessee's Center for Business and Economic Research (CBER) forecasts growth of 0.68 percent in Tennessee nominal personal income for calendar year 2009 and 2.82 percent for calendar year 2010. The forecast growth for Fiscal Year 2010 is 1.5 percent. Exhibit 1 provides a table summarizing indicators related to Tennessee economic growth.

**Exhibit 1: Economic Report Forecast Summary**

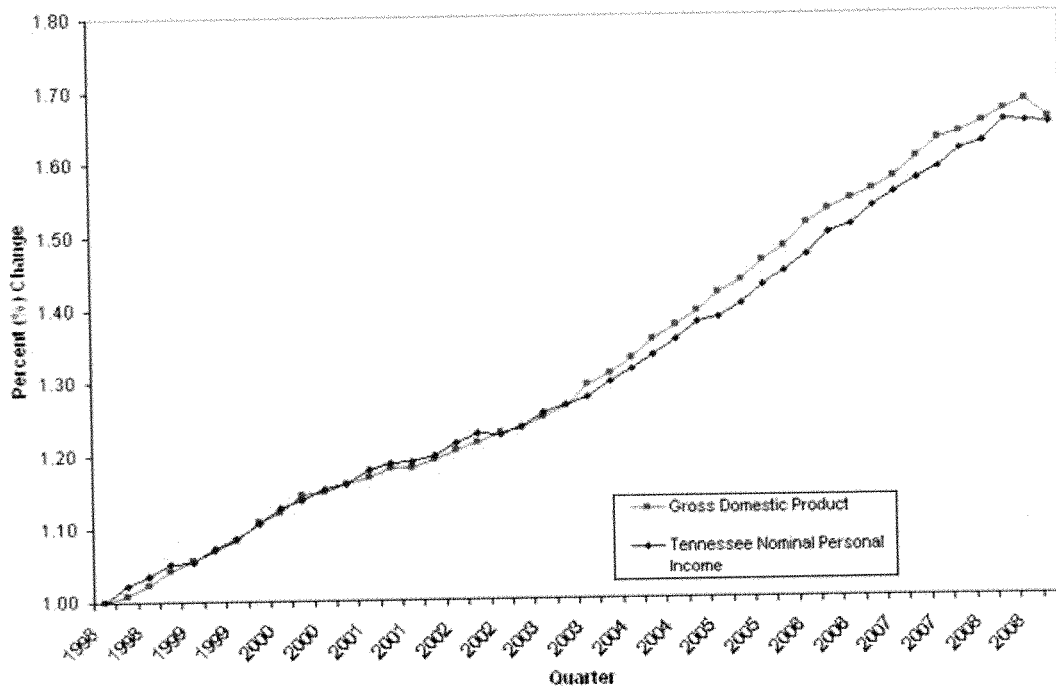
<b>Indicator</b>	<b>2009</b>	<b>2010</b>
US Real GDP	-2.52%	2.22%
US Nominal Personal Income	0.79%	2.54%
TN Nominal Personal Income	<b>0.68%</b>	<b>2.82%</b>
US Unemployment	8.50%	9.10%
TN Unemployment	8.90%	9.60%
Consumer Price Index	-2.24%	2.39%
Federal Fund Rate (% per annum)	0.13%	0.94%

Source: UT CBER, Economic Report to the Governor, Table 2.2:  
Selected US and Tennessee Economic Indicators, Seasonally  
Adjusted.

### Gross Domestic Product

Historically, growth in Tennessee personal income has closely followed growth in GDP. (See Exhibit 2.) Because of the lack of other public estimates of Tennessee personal income growth to compare to CBER's estimate, this commentary compares GDP estimates produced by CBER with GDP estimates produced by other economic forecasters.

## Exhibit 2: Real GDP Growth and Tennessee Nominal Personal Income (Quarterly)



Source: United States Bureau of Economic Analysis (Accessed April 14, 2009).

### Comparisons

CBER's Economic Report forecasts GDP growth of -2.52 percent in calendar year 2009 and 2.22 percent in 2010. Staff used central bank and government forecasts, and the April 2009 Bloomberg Economic Forecast as comparators. Bloomberg surveyed 57 economic forecasters between March 30 and April 8, 2009, to provide the data for its April 2009 Economic Forecast.

### Exhibit 3: Central Bank & Government Forecast Comparison: 2009 Real GDP Growth

Forecaster	2009	2010	Date
Blue Chip <sup>1</sup>	-1.4	3.2	March 10, 2009
Congressional Budget Office	-3.0	2.9	March 20, 2009
Fannie Mae	-2.0	-2.4	March 10, 2009
Federal Reserve Board <sup>2</sup>	-1.3	2.5	January 28, 2009
FRB Philadelphia Survey of Economic Forecasters	-2.0	2.2	February 13, 2009
Freddie Mac	-1.1	3.0	March 10, 2009
International Monetary Fund	-1.6	1.6	January 28, 2009
Office of Management and Budget <sup>1</sup>	0.1	4.3	March 20, 2009
Royal Bank of Canada	-2.4	2.2	March 2009
World Bank	-0.5	2.0	March 31, 2009
High	0.1	4.3	
Mean	-1.5	2.2	
Median	-1.5	2.4	
Low	-3.0	-2.4	

Notes: <sup>1</sup> A Preliminary Analysis of the President's Budget and an Update of CBO's Budget and Economic Outlook March 2009 Table 2-6

<sup>2</sup> Low-end of the Federal Reserve Board's forecast to be conservative

#### Exhibit 4: CBER Economic Report vs. Other Forecasters

Forecaster Calendar year	Central Banks & Governments		Bloomberg		Variances	
	2009	2010	2009	2010	2009	2010
High	0.10%	4.30%	2.09%	3.00%	-1.99%	1.30%
Mean	-1.52%	2.15%	-2.28%	1.61%	0.76%	0.54%
Median	-1.50%	2.35%	-2.50%	1.85%	1.00%	0.50%
Low	-3.00%	-2.40%	-4.00%	-1.70%	1.00%	-0.70%
CBER GDP Forecast	-2.52%	2.22%	-2.52%	2.22%		
CBER Variance Mean	1.00%	0.07%	-0.24%	0.61%		
CBER Variance Median	1.02%	-0.13%	2.26%	0.37%		

The central bank and government economists' forecasts favor a lower rate of decrease in GDP for calendar year 2009 compared to the Bloomberg April 2009 Economic Forecast. The median GDP forecast of economists surveyed by Bloomberg was -2.5 percent versus -1.5 percent for central bank and government economists, a variance of 100 basis points or 1.0 percent. Central bank and government economists' median forecast for 2010 was 2.35 percent, 50 basis points more than the median 2010 GDP Bloomberg forecast of 1.85 percent.

CBER's 2010 forecast is very close to the central bank and government economists' forecasts, with a forecast of 2.22 percent, compared to the central bank and government economists' median forecast of 2.35 percent. CBER's 2010 forecast varies more from Bloomberg's, where GDP median in 2010 is forecast at 1.85 percent.

Therefore, CBER's U.S. GDP forecast appears reasonable when compared to the medians of the Bloomberg April 2009 Economic Forecast and the central bank and government economists' forecasts.

#### Exhibit 5: Economic Report GDP Forecasts

Calendar Year	CBER U.S. GDP Forecast	U.S. GDP	Forecast Error
2010	2.22%	TN Forecast 2010	
2009	-2.52%	TN Forecast 2009	
2008	1.90%	1.10%	0.80%
2007	2.80%	2.00%	0.80%
2006	3.40%	2.80%	0.60%
2005	3.60%	2.90%	0.70%
2004	4.70%	3.60%	1.10%
2003	3.10%	2.50%	0.60%
2002	2.10%	1.60%	0.50%
2001	1.10%	0.80%	0.30%
2000	3.10%	3.70%	-0.60%
1999	2.00%	4.50%	-2.50%
1998	2.50%	4.20%	-1.70%
1997	2.10%	4.50%	-2.40%
1996	2.50%	3.70%	-1.20%
High	4.70%	4.50%	1.10%
Mean	2.68%	2.92%	-0.23%
Median	2.50%	2.90%	0.50%
Low	1.10%	0.80%	-2.50%

Source: UT CBER Economic Reports to the Governor 1996-2009 and US Bureau of Economic Analysis.

### Tennessee Personal Income

The Economic Report states that “the best single indicator of the projected path of the state economy is the unemployment rate.”<sup>1</sup> CBER forecasts a Tennessee unemployment rate of 8.9 percent for calendar year 2009 and 9.6 percent for calendar year 2010.

CBER notes another factor affecting the rate of growth this year “will be stronger growth in inflation adjusted-income than nominal income, reflecting the prospect of deflation.”<sup>2</sup> The CBER consumer price index (CPI) forecast for 2009 is -2.24 percent and for 2010 is 2.39 percent.

The Economic Report forecasts Tennessee nominal personal income growth at 0.68 percent for calendar year 2009 and 2.82 percent for calendar year 2010. (See Exhibit 6.) The forecast for Fiscal Year 2010 is 1.5 percent.<sup>3</sup> The forecast for U.S. nominal personal income growth is 0.79 percent for calendar year 2009 and 2.54 percent for calendar year 2010.<sup>4</sup>

**Exhibit 6: Calendar Year Nominal Personal Income**

Calendar Year	Economic Report Forecast Nominal Personal Income	BEA Tennessee Nominal Personal Income	Forecast Error	BEA US Nominal Personal Income
2010	2.82%	TN Forecast 2010		
2009	0.68%	TN Forecast 2009		
2008	4.56%	2.80%	1.76%	2.90%
2007	5.50%	5.26%	0.24%	5.50%
2006	5.54%	6.24%	-0.70%	6.40%
2005	5.50%	5.22%	0.28%	4.40%
2004	5.00%	5.58%	-0.58%	4.40%
2003	4.80%	3.91%	0.89%	6.40%
2002	4.20%	3.08%	1.12%	4.20%
2001	5.40%	3.75%	1.65%	4.60%
2000	5.00%	6.01%	-1.01%	4.10%
1999	4.53%	7.15%	-2.62%	7.50%
1998	5.10%	5.07%	0.03%	6.80%
1997	5.50%	5.34%	0.16%	5.30%
1996	5.80%	4.95%	0.85%	5.20%
High	5.80%	7.15%	1.76%	7.50%
Mean	5.11%	4.95%	0.16%	5.21%
Median	5.10%	5.22%	0.24%	5.20%
Low	4.20%	2.80%	-2.62%	2.90%

Source: UT CBER Economic Reports to the Governor 1996-2009 and US Bureau of Economic Analysis.

**Exhibit 7: Tennessee Nominal Personal Income and Unemployment**

Year	BEA Tennessee Nominal Personal Income	Tennessee Annual Unemployment
2010 TN Economic Report Forecast	2.82%	9.60%
2009 TN Economic Report Forecast	0.68%	8.90%
2008	2.80%	6.40%
2007	5.26%	4.70%
2006	6.24%	5.20%
2005	5.22%	5.60%
2004	5.58%	5.40%
2003	3.91%	5.70%
2002	3.08%	5.30%
2001	3.75%	4.70%
2000	6.01%	4.00%
1999	7.15%	4.10%
1998	5.07%	4.50%
1997	5.34%	5.30%
1996	5.00%	5.30%

Source: UT CBER Economic Reports to the Governor 1996-2009 and US Bureau of Economic Analysis.

<sup>1</sup> University of Tennessee, Center for Business and Economic Research, “An Economic Report to the Governor of the State of Tennessee on the State’s Economic Outlook: January 2009,” 2009, p. 28.

<sup>2</sup> Ibid., p. 29.

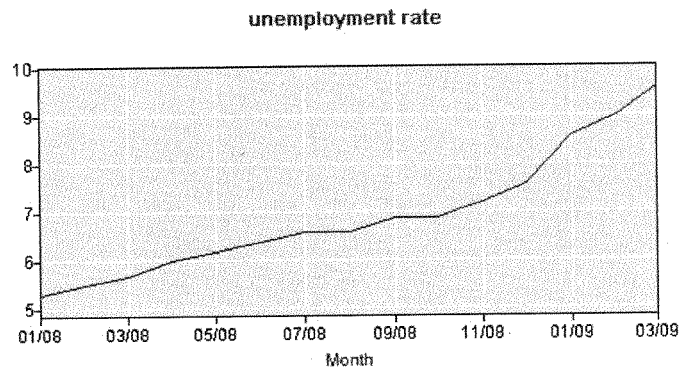
<sup>3</sup> Ibid.

<sup>4</sup> Ibid., p. 30.

## Unemployment

Overall, unemployment is higher in 2009 than in 2008, and will likely remain high through the year. Consistent with a recession, Tennessee's reported unemployment rate has been increasing since January 2008. (See Exhibit 8.) The four-week moving average for Tennessee continued unemployment has steadily risen since January 2009. However, the four-week moving average for initial claims has been falling since the week of January 31. (See Exhibit 9.) Unemployment will likely remain higher than in 2008.

**Exhibit 8: Tennessee Unemployment Rate 2008 to March 2009**



Source: US Bureau of Labor Statistics (Accessed 4/19/2009).

**Exhibit 9 : Tennessee Weekly Claims for Unemployment Insurance Data Not Seasonally Adjusted**

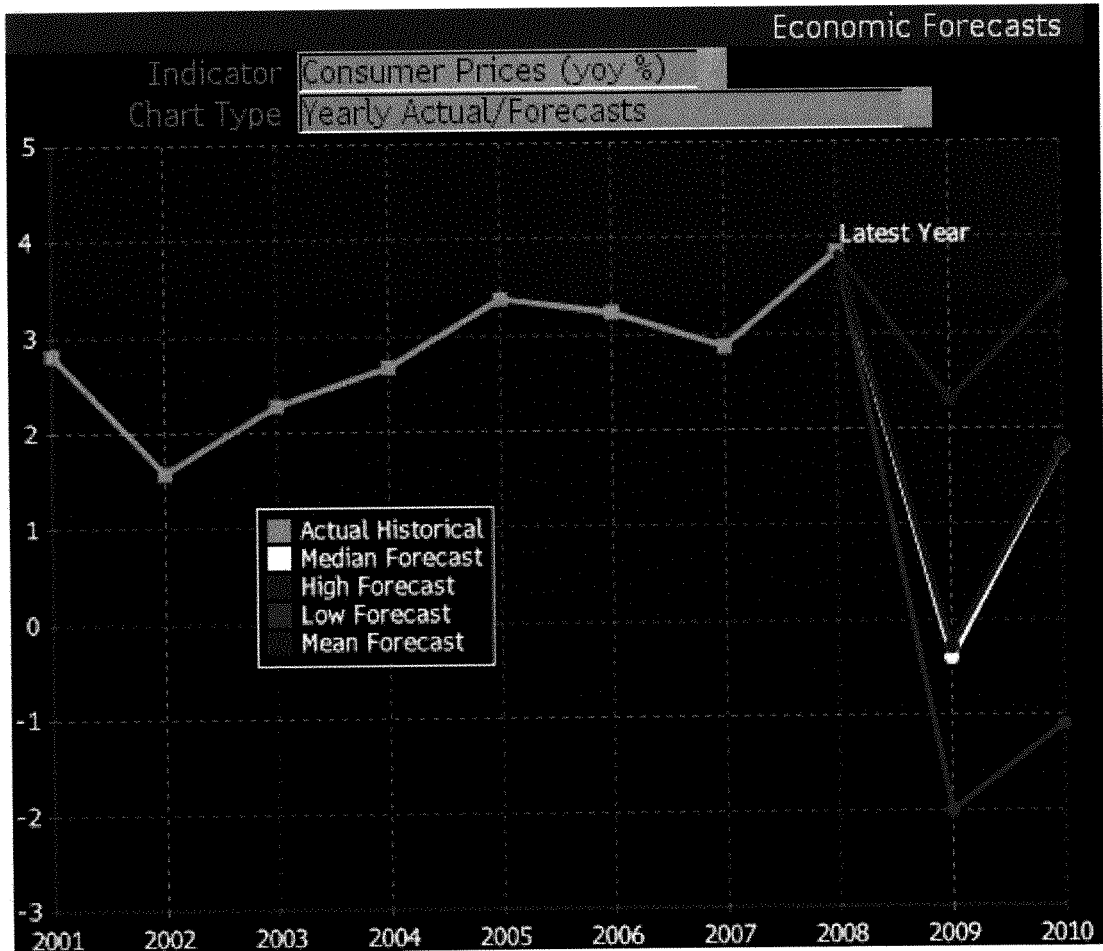
State	Filed week ended	Initial Claims	Reflecting Week Ended	Continued Claims	Covered Employment	Insured Unemployment Rate	4-Week Average Initial Claims	4-Week Average Continued Claims
Tennessee	1/3/2009	18,490	12/27/2008	87,147	2,709,206	3.22	14,722	80,070
Tennessee	1/10/2009	30,753	1/3/2009	112,174	2,713,729	4.13	19,016	89,350
Tennessee	1/17/2009	22,515	1/10/2009	113,874	2,713,729	4.2	20,969	98,411
Tennessee	1/24/2009	15,045	1/17/2009	105,987	2,713,729	3.91	21,701	104,796
Tennessee	1/31/2009	17,296	1/24/2009	116,671	2,713,729	4.3	21,402	112,177
Tennessee	2/7/2009	15,578	1/31/2009	114,740	2,713,729	4.23	17,609	112,818
Tennessee	2/14/2009	12,235	2/7/2009	113,810	2,713,729	4.19	15,039	112,802
Tennessee	2/21/2009	12,691	2/14/2009	111,130	2,713,729	4.1	14,450	114,088
Tennessee	2/28/2009	14,773	2/21/2009	116,252	2,713,729	4.28	13,819	113,983
Tennessee	3/7/2009	12,620	2/28/2009	115,072	2,713,729	4.24	13,080	114,066
Tennessee	3/14/2009	14,014	3/7/2009	118,393	2,713,729	4.36	13,525	115,212
Tennessee	3/21/2009	11,307	3/14/2009	116,148	2,713,729	4.28	13,179	116,466
Tennessee	3/28/2009	14,025	3/21/2009	118,128	2,713,729	4.35	12,992	116,935
Tennessee	4/4/2009	15,646	3/28/2009	118,654	2,713,729	4.37	13,748	117,831

Source: US Department of Labor Employment and Training Administration.

## Deflation

Deflation is a decrease in the overall price level of goods and services. Bloomberg's April 2009 Economic Forecast estimates a median CPI forecast of -0.4 percent for 2009 and 1.8 percent for 2010. The Bloomberg Forecast indicates an expectation of deflation during 2009 and reflation during 2010.

Exhibit 10: Bloomberg April 2009 Economic Forecast - Consumer Price Index Year-over-Year %



Source: Bloomberg (Accessed April 16, 2009).

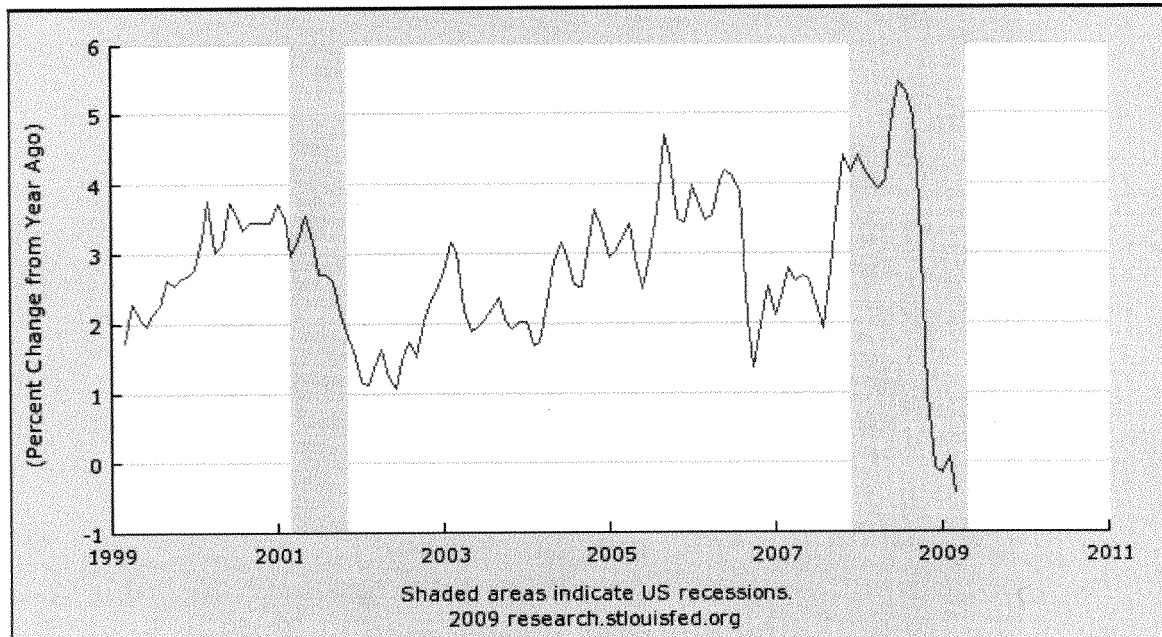
The Federal Open Market Committee (FOMC) made the following comment concerning inflation expectations in the FOMC Statement for the March 18, 2009 meeting:

In light of increasing economic slack here and abroad, the Committee expects that inflation will remain subdued. Moreover, the Committee sees some risk that inflation could persist for a time below rates that best foster economic growth and price stability in the longer term.<sup>5</sup>

<sup>5</sup> Federal Open Market Committee, "Press Release," 2009 Monetary Policy Releases, March 18, 2009, accessed April 21, 2009, <http://www.federalreserve.gov/newsevents/press/monetary/20090318a.htm>.

Therefore, the FOMC believes the rate of inflation is low due to the global economic contraction.

**Exhibit 11: Consumer Price Index for All Urban Consumers**



Source: U.S. Department of Labor: Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items (CPIAUCSL), accessed April 16, 2009.

The inflation rate decreased during the last recession and did not begin increasing until after the recovery began. This recession has been different in that the jump in oil and commodity prices during the first half of 2008 increased monthly CPI year-over-year to a 10-year high of 5.6 percent for July 2008. The decrease in the inflation rate has been significant because oil prices began decreasing in the second half of 2008.<sup>3</sup>

**Exhibit 12: US CPI Urban Consumers Year-over-Year Non-Seasonally Adjusted**

Month	January	February	March
2009	211.143	212.193	212.709
2008	211.08	211.693	213.528
% Change	0.0%	0.2%	-0.4%

Source: Bloomberg and US Bureau of Labor Statistics.



However, CPI excluding food and energy, or Core CPI, has been positive and close to the two percent target used by the Federal Reserve in addressing inflation. (See Exhibit 13, line 7.)

**Exhibit 13: Consumer Price Index Figures**

Index	Current	Date	Previous	Date	Percent Change
<i>All Items</i>					
1) Index Level*	212.714	3/31/09	213.007	2/28/09	-.138
2) Month over Month %*	-.1	3/31/09	.4	2/28/09	-125.0
3) Year over Year %**	-.4	3/31/09	.2	2/28/09	-300.0
<i>Less Food and Energy (Core)</i>					
4) Index Level*	218.042	3/31/09	217.670	2/28/09	.171
5) Month over Month %*	.2	3/31/09	.2	2/28/09	.0
6) Year over Year %**	1.8	3/31/09	1.8	2/28/09	.0
<i>Urban Consumers</i>					
7) Core Year over Year %**	1.8	3/31/09	1.8	2/28/09	.0

Notes: \* denotes seasonally adjusted

\*\* denotes not seasonally adjusted

Source: Bloomberg (Accessed April 16, 2009).

### Forecast Risks

On November 28, 2008, the National Bureau of Economic Research's Business Cycle Dating Committee met and determined that a peak in U.S. economic activity occurred in December 2007. This peak indicates the beginning of a recession.<sup>6</sup>

The Economic Report recognizes two shocks to the economy that helped to push the U.S. economy into recession: the housing crisis and the financial market turmoil beginning in the summer of 2007.<sup>7</sup> During the first half 2008, the U.S. economy experienced an oil shock as well with oil prices increasing to a record level of over \$4.00 per gallon. This coming fiscal year may experience uncertainty from other shocks or from the failure of U.S. monetary or fiscal policy. The key point is that the probability of these unexpected events occurring is not quantifiable.

Conditions that may influence CBER's Tennessee forecast:

1. Continued weakness in the housing markets
2. Continued weakness in the credit markets
3. Accelerated increases in the cost of energy, food, and other commodities
4. High rates of inflation or deflation due to failures of U.S. monetary policy
5. Failure of U.S. fiscal policy to rekindle economic growth

<sup>6</sup> National Bureau of Economic Research, Business Cycle Dating Committee, "Determination of the December 2007 Peak in Economic Activity," December 11, 2008.

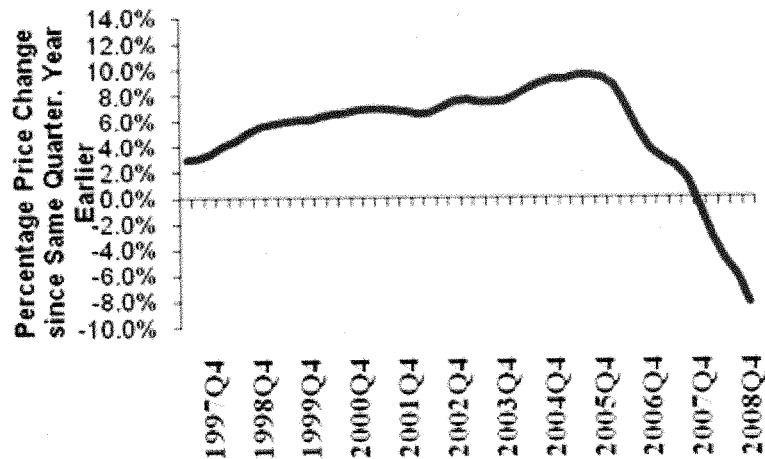
<sup>7</sup> Ben S. Bernanke, Federal Reserve Chairman, "The Crisis and Policy Response" (speech, the Stamp Lecture, London School of Economics, London, England, January 13, 2009).

## Current Economic Conditions

### Housing Markets

The burst of the housing bubble in 2005 led to declining housing prices in the United States. (See Exhibit 14.) According to the Federal Housing Finance Agency, U.S. housing prices fell 6.3 percent for the 12-month period ending in January 2009. January 2009 prices seasonally adjusted rose 1.7 percent month-over-month.<sup>8</sup> However, Haver Analytics believes that a bottom may be forming in the housing market.<sup>9</sup>

**Exhibit 14: Percentage Housing Price Change since Same Quarter, Year Earlier**



Source: Federal Housing Finance Agency (Accessed April 20, 2009).

<sup>8</sup> "U.S. Monthly House Price Index Estimates 1.7 Percent Price Increase From December to January," Federal Housing Finance Agency, March 24, 2009.

<sup>9</sup> Tom Moeller, "U.S. Housing Starts Fall to Second Lowest Level on Record But Bottom May Be Forming," Haver Analytics, April 16, 2009.

### Exhibit 15: US January FHFA House Price Index Summary

	Jan. 2009	Dec. 2008	Nov. 2008	Oct. 2008	Sept. 2008	Aug. 2008
U.S.	1.7%	-0.2%	-2.1%	-1.1%	-1.1%	-0.9%
Pacific	0.9%	-1.1%	-3.2%	-2.8%	-2.5%	-2.2%
Mountain	0.8%	-1.2%	-2.2%	-0.6%	-1.7%	-1.3%
West N. Central	1.0%	2.2%	-3.1%	-0.4%	-0.3%	-0.5%
West S. Central	0.0%	1.0%	-1.8%	-0.5%	0.7%	-0.7%
East N. Central	3.9%	0.3%	-1.8%	-0.8%	-1.5%	-0.2%
<b>East S. Central</b>	<b>0.6%</b>	<b>0.8%</b>	<b>-1.6%</b>	<b>-0.4%</b>	<b>-0.4%</b>	<b>-0.8%</b>
New England	2.0%	0.2%	-1.4%	0.1%	-0.5%	-0.4%
Middle Atlantic	1.5%	-1.6%	-0.5%	-1.3%	0.9%	-0.8%
South Atlantic	3.6%	-1.1%	-2.8%	-1.3%	-2.5%	-1.1%

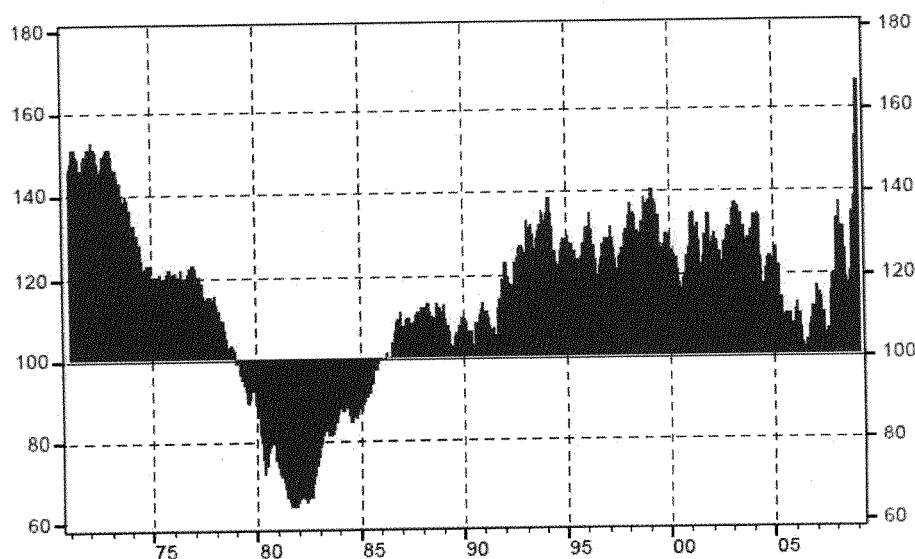
Note: Data is seasonally adjusted, 1Q 1991 = 100.

**East South Central:** Kentucky, Tennessee, Mississippi, Alabama

Source: Bloomberg, Office of Federal Housing Enterprise Oversight, Federal Housing Finance Agency.

The National Association of Realtors' (NAR) Housing Affordability Index is at a record high, in large part due to lower housing prices and low mortgage rates.<sup>10</sup> (See Exhibit 16.) NAR's Pending Home Sales Index for February 2009 was 1.4 percent less than the February 2008 index. Total housing inventory at the end of February rose 5.2 percent to 3.80 million existing homes available for sale, which represents a 9.7-month supply at the current sales pace, unchanged from January.<sup>11</sup>

### Exhibit 16: National Association of Realtors Composite Housing Affordability Index, January 1971- January 2009



<sup>10</sup> Tom Moeller, "U.S. Pending Home Sales Tick Higher," Haver Analytics, April 1, 2009.

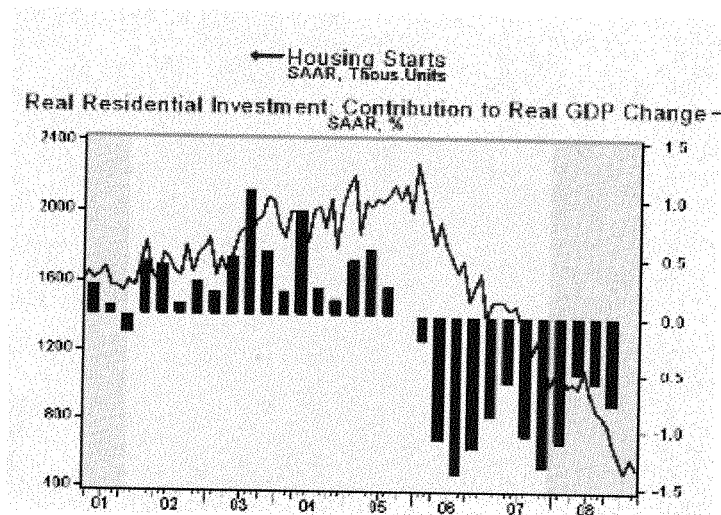
<sup>11</sup> "Existing-Home Sales Rise In February," National Association of Realtors, March 23, 2009.

Source: National Association of Realtors/Haver Analytics.

Preliminary U.S. home sales in February were 4,720,000 units, illustrating a 5.15 percent increase over January sales of 4,490,000 units. February 2009 sales of existing homes were still 4.6 percent below February 2008. The national median existing-home price for all housing types was \$165,400 in February, down 15.5 percent from a year ago when the median was \$195,800 and conditions were close to normal.<sup>12</sup>

With foreclosures coming into the market, the supply of housing continues to exceed demand. Prices are still falling in some regional markets month-over-month as well as year-over-year. (See Exhibit 15.) This has caused housing starts to decline. (See Exhibit 17.)

### Exhibit 17: Housing Starts and Real Residential Investment



Source: U.S. Census Bureau, Bureau of Economic Analysis/Haver Analytics.

### Credit Markets

The availability of credit is vital to our economy. Beginning with the failure of mortgage based securities and collateral debt obligations in 2007, the financial markets began to crumble. Without access to the debt markets, businesses could not get access to working capital loans, homebuyers could not use mortgages to buy homes, and consumers' credit was drastically reduced. The Federal Reserve and Treasury are working together to mitigate the problems in the financial markets.

The return of availability of credit once the Treasury's Financial Stability Plan has been fully executed should help stabilize financial intuitions.

<sup>12</sup> "Existing-Home Sales Rise In February," National Association of Realtors, March 23, 2009.

The major points of the Financial Stability Plan include:

1. a broad program to stabilize the housing market by encouraging lower mortgage rates and making it easier for millions to refinance and avoid foreclosure;
2. a new capital program to provide banks with a safeguard against a deeper recession;
3. a major new lending program with the Federal Reserve targeted at the securitization of markets critical for consumer and small business lending; and
4. a program to set up funds to provide a market for the legacy loans and securities that currently burden the financial system.<sup>13</sup>

The Federal Reserve and Treasury agreed on the following points to help preserve financial and monetary stability:

1. Treasury-Federal Reserve cooperation in improving the functioning of credit markets and fostering financial stability;
2. the Federal Reserve to avoid credit risk and credit allocation;
3. need to preserve monetary stability; and
4. need for a comprehensive resolution regime for systemically critical financial institutions.<sup>14</sup>

A return to fully functioning financial markets is necessary for both general economic growth and the needs of state and local governments.

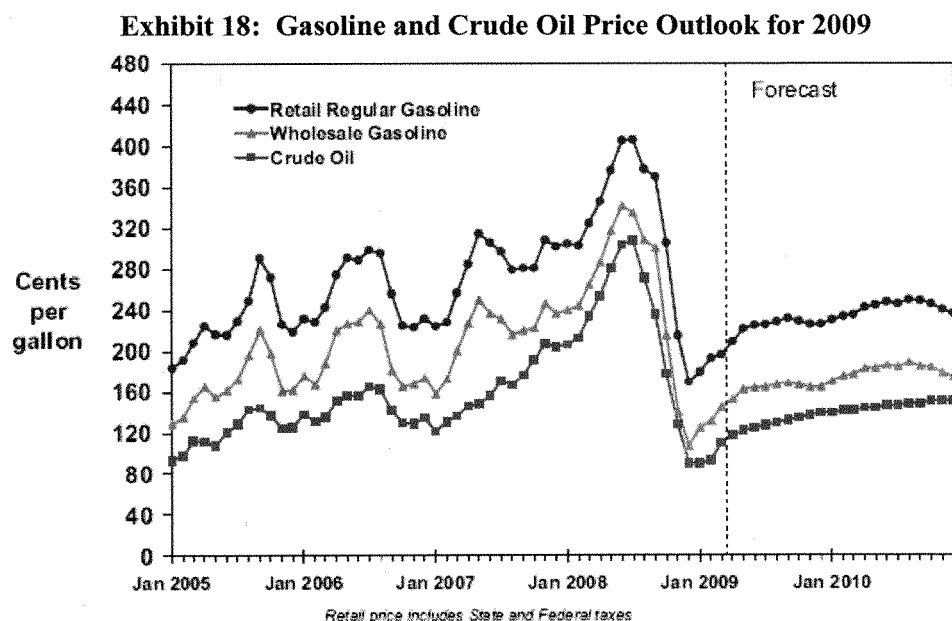
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<sup>13</sup> "Financial Stability Plan," U.S. Department of the Treasury, March 31, 2009, accessed April 10, 2009, <http://www.financialstability.gov/roadtostability/index.html>.

<sup>14</sup> "The Role of the Federal Reserve in Preserving Financial and Monetary Stability: Joint Statement by the Department of the Treasury and the Federal Reserve," U.S. Department of the Treasury, March 23, 2009, accessed April 10, 2009, <http://www.financialstability.gov/latest/tg66.html>.

### Oil Prices and Inflation

Oil prices dominated headlines in 2008, as prices of West Texas Intermediate (WTI) crude oil averaged \$100 per barrel- up \$27 from 2007.<sup>15</sup> As in five of the last seven U.S. recessions, significant increases in the price of oil preceded the economic downturn in 2008.<sup>16</sup> Through the summer of 2008, oil prices increased due to demand from China, India, and other Asian emerging economies.



Source: U.S. Department of Energy, Energy Information Administration, Short-Term Energy and Summer Fuels Outlook, April 2009, p. 11.

High prices and a deteriorating economy led to a 6.1 percent drop in U.S. liquid fuel consumption in 2008.<sup>17</sup> The global drop in demand led to a dramatic decrease in the price of crude oil. Additionally, plunges in retail gasoline prices helped keep inflation rising at slow rates in 2008.

The Energy Information Administration (EIA) anticipates WTI prices to average \$53 per barrel in 2009.<sup>18</sup> As Exhibit 18 depicts, the EIA estimates summer 2009 gas prices to average \$2.23 per gallon compared to \$3.81 during summer 2008.<sup>19</sup> Declining oil prices have contributed to low rates of inflation, though it should also be noted that cheap oil does not guarantee fast economic growth. Economies like Tennessee's, which still maintain a higher than average manufacturing workforce, are those most negatively impacted by increasing oil prices.

<sup>15</sup> U.S. Department of Energy, Energy Information Administration, "Short-Term Energy and Summer Fuels Outlook," April 14, 2009, p. 1, accessed April 16, 2009, <http://www.eia.doe.gov/emeu/steo/pub/contents.html>.

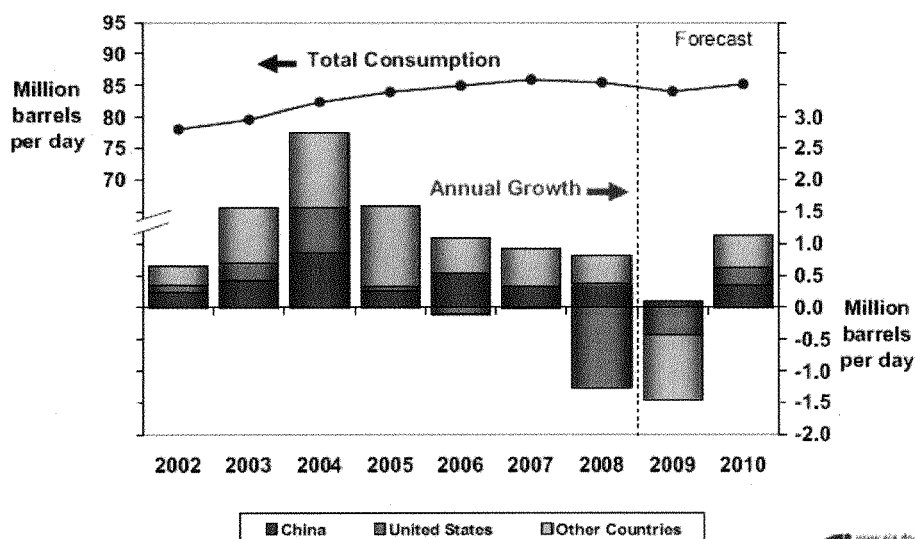
<sup>16</sup> Keith Sill, "The Macroeconomics of Oil Shocks," Federal Reserve Bank of Philadelphia *Business Review* (First Quarter, 2007), p. 1.

<sup>17</sup> Energy Information Administration, "Short-Term Energy and Summer Fuels Outlook," p. 3.

<sup>18</sup> *Ibid.*, p. 1.

<sup>19</sup> *Ibid.*

**Exhibit 19: Oil Consumption Growth History and Forecast**



Short-Term Energy Outlook, April 2009



Source: U.S. Department of Energy, Energy Information Administration, Short-Term Energy and Summer Fuels Outlook, April 2009, p. 12.

World oil consumption is expected to drop by 1.35 million barrels per day (bbl/d) in 2009, but grow by 1.1 million bbl/d in 2010.<sup>20</sup> A longer global recession could further drop oil consumption. However, sustained demand in China and a more quickly paced economic recovery abroad could return annual oil consumption growth to levels previously seen in 2006 and 2007. This activity would likely not happen until 2010. In fact, the EIA forecast for 2009 displays a fourth consecutive year of decreased or stagnant consumption growth in the United States.<sup>21</sup>

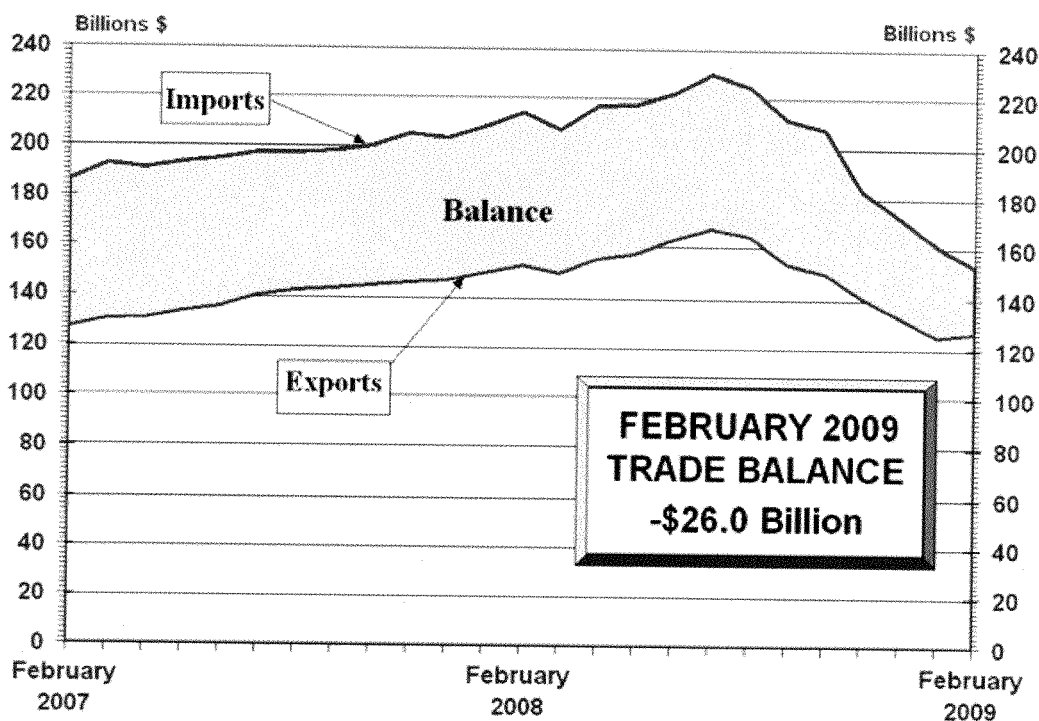
The U.S. Department of Agriculture forecasts CPI for food will increase 3.0 to 4.0 percent in 2009. This represents a decrease from 2008 levels due to lower energy and commodity costs.<sup>22</sup> An increase in oil demand could trigger more rapid price inflation for goods, services, and commodity markets.

<sup>20</sup> Ibid., p. 2.

<sup>21</sup> Ibid., p. 12.

<sup>22</sup> "Food CPI and Expenditures: Analysis and Forecasts of the CPI for Food," U.S. Department of Agriculture, Economic Research Service, March 25, 2009, accessed April 18, 2009, <http://www.ers.usda.gov/Briefing/cpifoodandexpenditures/consumerpriceindex.htm>.

**Exhibit 20: U.S. International Trade in Goods and Services**



Source: U.S. Census Bureau, Foreign Trade Division, "Goods and Services Deficit Decreases in February 2009," April 9, 2009.

The U.S. has been importing more goods than it exports over the past decade. This is referred to as a trade deficit. This deficit decreased from \$58.4 billion in February 2007 to \$26.0 billion in February 2009. The improvement in the trade deficit has been experienced due to a steeper decline in imports than exports. The improvement in the trade deficit has decreased the negative impact of net exports on GDP. A stronger dollar may cause the trade deficit to increase even in this worldwide recession.

### **Conclusion**

The economy will likely experience an additional year or two of sluggish economic growth. Continued languishing of the housing sector and tight credit markets combined with high unemployment rates may continue to negatively impact consumption-based taxes. Based upon this review, CBER's forecast of 0.68 percent nominal personal income growth for 2009 appears reasonable.